

ABSTRACT OF THE DISCLOSURE

An inductively coupled antenna for installation on a reaction chamber of an inductively coupled plasma (ICP) processing apparatus and for connection to a radio frequency (RF) power source to induce an electric field for ionizing a reactant gas injected into the reaction chamber and for generating plasma includes a coil having a plurality of turns including an outermost turn and a plurality of inner turns, wherein a current flowing through the outermost turn is larger than a current flowing through the plurality of inner turns. The outermost turn and the inner turns are connected to the RF power supply in parallel and the inner turns are connected to each other in series. The inductively coupled antenna further includes a conductive metal tube that has a cooling path and a conductive metal strip that is electrically and thermally connected to a lower portion of the metal tube.